# 3.9 NOISE

This section describes the noise environment in the vicinity of the proposed Broad Beach Restoration Project (Project), and potential effects of Project-generated noise on the public's use and enjoyment of public trust resources and values.

## 3.9.1 Environmental Setting Pertaining to the Public Trust

Broad Beach Restoration Area Location and Description

The Broad Beach Restoration Area (Project area) encompasses approximately 42 acres extending laterally for more than 6,700 feet from Lechuza Point to Trancas Creek Lagoon, including both public trust lands and adjacent private lands that support residential uses and could be impacted by Project-generated noise. The Project area also includes existing vertical and lateral access easements that could be impacted by the proposed Project. Additionally, it includes the Zuma Beach parking lot adjacent to Trancas Creek, proposed for temporary construction staging.

Off-site Project Area Location and Description

Off-site Project areas subject to potential direct Project impacts include regions in the vicinity of the Trancas Sediment Deposit, the Ventura Harbor sand trap, and the Dockweiler borrow site, as well as the sand transportation routes between these sites and the Project area.

Relationship Between Noise and Public Trust Resources and Values

Noise has the potential to affect the public's right to use and enjoy public trust resources including those at Broad Beach as well as those within and adjacent to the borrow sites, and other area beaches (e.g., Zuma). Noise also has the potential to disturb terrestrial and marine biological resources, which are considered public trust resources (see Effects on Wildlife discussed below).

Impacts Associated With Noise

*Definitions*

Noise is defined as unwanted sound that is heard by people or wildlife and that interferes with normal activities or otherwise diminishes the quality of the environment. Noise is usually measured as sound level on a logarithmic decibel (dB) scale, with the frequency spectrum adjusted by the A-weighting network. The dB is a unit division on a logarithmic scale that represents the intensity of sound relative to a reference intensity near the threshold of normal human hearing. The A-weighting network is a filter that approximates the response of the human ear at moderate sound levels. The resulting unit of measure is the A-weighted decibel, or dBA.

To analyze the noise levels in an area, noise events are combined for an instantaneous value or averaged over a specific time period, e.g., one hour, multiple hours, 24 hours. The time-weighted measure is referred to as Equivalent Sound Level ($L_{eq}$). The equivalent sound level is defined as the same amount of sound energy averaged over a given time period. The percentage of time that a given sound level is exceeded can also be represented. For example, $L_{10}$ is a sound level that is exceeded 10 percent of the time over a specified period.

*Effects on Wildlife*

Wildlife response to noise is dependent not only on the magnitude, but also the characteristic of the sound, or the sound frequency distribution. Wildlife can become accustomed to ongoing noise (e.g., roadway noise), but can be disturbed by infrequent or episodic noise events. Wildlife are affected by a broader range of sound frequencies than humans. Determining the effects of noise on wildlife is complicated, because responses vary between species and individuals of a population. However, noise is known to affect an animal's physiology and behavior, and chronic noise-induced stress is deleterious to an animal's energy budget, reproductive success, and long-term survival (Radle 2001). Noise impacts to marine wildlife are detailed in Section 3.3, *Marine Biological Resources*.

*Effects on Humans*

Human response to noise is dependent not only on the magnitude, but also on the characteristic of the sound, or the sound frequency distribution. Generally, the human ear is more susceptible to higher frequency sounds than lower frequency sounds. Human response to noise is also dependent on the time of day and expectations based on location and other factors. For example, a person sleeping at home might react differently to the sound of a car horn than to the same sound while driving during the day. The regulatory process has attempted to account for these factors by developing overall noise ratings such as Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (Ldn) which incorporate penalties for noise occurring at night. The Ldn rating is an average of noise over a 24-hour period in which noises occurring between 10:00 PM and 7:00 AM are increased by 10 dBA. The CNEL is similar, but also adds a weighting of 3 dBA to noises that occur between 7:00 PM and 10:00 PM Average noise levels over daytime hours only (7:00 AM to 7:00 PM) are represented as Ld and nighttime noises (7 PM to 7 AM) as Ln. Table 3.9-1 is a scale showing typical noise levels encountered in common daily activities.

**Table 3.9-1. Common Environmental Noise Levels**

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| Jet fly-over at 1000 feet | --110-- | Live rock band concert |
| Gas lawn mower at 3 feet | --100-- | |
| Diesel truck at 50 feet | --90-- | Food blender at 3 feet |
| Noisy urban area, daytime | --80-- | Garbage disposal at 3 feet |
| Gas lawn mower or commercial area at 100 feet | --70-- | Vacuum cleaner at 10 feet or normal speech at 3 feet |
| Heavy traffic at 300 feet | --60-- | |
| Quiet urban daytime | --50-- | |
| Quiet urban nighttime | --40-- | Background noise in a theater or large conference room |
| Quiet rural nighttime | --30-- | Library or bedroom at night |
| | --20-- | Broadcast/recording studio |
| | --10-- | |
| Lowest threshold of human hearing | --0-- | Lowest threshold of human hearing |

*Source*: CalTrans 2009.

The effects of noise are evaluated based on how a Project may increase existing noise levels for individuals using or enjoying public trust resources at or near the Broad Beach Restoration Area or the borrow sites and sand transportation routes.

When a new noise source is introduced, most people begin to notice a change in environmental noise levels at approximately 5 dBA. Typically, average changes in noise levels of less than 5 dBA cannot be definitely considered as producing an adverse impact. For changes in levels above 5 dBA, it is difficult to quantify the impact beyond recognizing that greater noise level changes would result in greater impacts (CSLC 2006).

In community noise impact analysis, long-term noise increases of 5 to 10 dBA are considered to have "some impact." Noise level increases of more than 10 dBA are generally considered severe. In the case of short-term noise increases, such as those from construction activities, the 10 dBA threshold between "some" and "severe" is replaced with a criterion of 15 dBA. These noise-averaged thresholds shall be lowered when the noise level fluctuates, when the noise has an irritating character such as considerable high frequency energy, or if it is accompanied by subsonic vibration. In these cases the impact must be individually estimated.

Project Area Overview

Existing sources of noise in the vicinity of the Broad Beach include;

- Breaking waves along the beach;
- Public recreational activities including, jogging and dog-walking;

- Offshore uses including surfing, swimming, stand-up paddle boarding, and boating;
- Noise generated at private residences, particularly from ongoing remodeling projects, loud music, and outdoor patio parties.

Noise studies conducted in San Diego as part of a similar beach nourishment project measured beach-front baseline noise levels ranging from 62 to 69 dBA, with the major contributing noise source being wave action (San Diego Association of Governments [SANDAG] 2011). Similarly, noise studies for an Environmental Impact Report (EIR) on Ellwood Beach in Santa Barbara county identified a CNEL of 64 dBA with a range of 57.7 to 63.8 dBA, with the major noise source being ocean waves (CSLC 2006, 2011)

In addition, noise experienced in the Project area is generated from traffic along Pacific Coast Highway, which is located approximately 40 to 60 feet above and 200 to 300 feet from much of the Project area. A noise study conducted in 1992 for the city of Malibu General Plan identified a $L_{eq}$ level of 70 dBA at the intersection of Trancas Canyon Road with Pacific Coast Highway at the eastern end of the Project area (Malibu 2009). However, roadway noise is limited along the beach due to the elevation difference, distance from the road and the screening effect of houses, with daytime traffic noise primarily audible from decelerating trucks or other peak noises.

Construction of an approved Biofiltration Project along Broad Beach Road may overlap with construction for the Broad Beach Restoration Project creating an additional source of short-term ambient noise, particularly when combined with multiple ongoing remodels of Broad Beach homes.

Off-site Project Areas Overview

Major noise sources in these areas would include similar sources to those found at Broad Beach, such as noise associated with natural ocean and wind forces, as well as beach and ocean recreational activities, all of which occur in the vicinity of the Trancas Sediment Deposit. However, the dominant noise source at Dockweiler State Beach originates from hundreds of daily low-level take-offs and landings by aircraft from Los Angeles International Airport (LAX), which pass directly over this beach and offshore waters. Noise from aircraft operations is expected to exceed all other sources and average 70 to 75 dBA over this beach. Additional sources of noise include traffic along Vista del Mar (which overlooks the beach), operations and construction at the nearby Hyperion Wastewater Treatment Plant, and oil tankers docking at the El Segundo Marine Terminal.

Noise sources at the Ventura Harbor sand trap include natural and recreational noise similar to the other beach study areas. Marine Park is a mid-sized recreational boat

harbor. Noise sources include recreational uses at Marina Park, recreational boats in the entrance channel, and periodic dredging operations.

### 3.9.2 Regulations Pertaining to the Public Trust

State

*California Noise Control Act of 1973*

This act established the Office of Noise Control in the State Department of Health Services to develop criteria and guidelines for local governments to use when setting standards for human exposure to noise and preparing noise elements for General Plans. The Office of Noise Control established an exterior noise limit of 65 dB to apply to parks.

*California Streets and Highways Code*

The California Streets and Highways Code, section 216 (Control of Freeway Noise in School Classrooms) requires, in general, that the California Department of Transportation (Caltrans) abate noise to 55 dBA, $L_{10}$, or 52 dBA, $L_{eq}$ or less. Caltrans Policy and Procedure Memorandum P74-47 (Freeway Traffic Noise Reduction, September 24, 1974) outlines the Caltrans policy and responsibilities related to transportation noise. In the California Government Code, section 65302, Caltrans is also required to provide cities and counties with a noise contour map along State highways. The State Motor Vehicle Code includes regulations related to the selling and use of vehicles that do not meet specified noise limits.

Local

*Noise Control Ordinance of the City of Malibu*

The intent of the city of Malibu Noise Control Ordinance is to control and prohibit unnecessary, excessive and annoying noise and vibration in the city. Noises (Municipal Code Chapter 8.24.040) and acts (Municipal Code Chapter 8.24.050) that are prohibited within the Malibu city limits are described along with enforcement provisions, violation penalties, and exemptions to these regulations (Malibu 2009 Municipal Code).

*City of Malibu General Plan Noise Element (Chapter 6)*

The purpose of the Noise Element (NE) contained within the General Plan for the city of Malibu is to provide guidance for controlling and abating unnecessary noise and protecting residents from adverse noise impacts. It provides information on the existing baseline noise environments and includes goals, objectives and implementation programs to ensure an acceptable noise environment. Additionally, it identifies criteria for evaluating the potential noise impacts from proposed projects (city of Malibu 2009).

### 3.9.3 Public Trust Impact Criteria

A substantial noise impact would occur if a person were to "*make, or cause or suffer, or permit to be made upon any public beach, occupied by such person, any unnecessary noises, sounds or vibrations which are physically annoying to reasonable persons of ordinary sensitivity or which are so harsh or so prolonged or unnatural or unusual in their use, time, or place as to occasion unnecessary discomfort to any persons within 500 feet of the place from which said noises emanate or which interfere with the peace and comfort of other occupants of the"* (city of Malibu 2011) public trust lands.

Additionally, a substantial noise impact would also occur from "*construction noise on weekdays between the hours of 7:00 PM and 7:00 AM, before 8:00 AM or after 5:00 PM on Saturday, or at any time on Sundays or holidays, except as permitted by the city of Malibu*" (city of Malibu 2011).

### 3.9.4 Public Trust Impact Analysis

Anticipated short-term ambient noise from the Project would include noise associated with offshore dredging, marine vessel transport of nourishment sand, and the operation of heavy equipment along Broad Beach for sand deposition and movement. Noise impacts from the Project would affect Broad Beach recreational users during initial Project construction, during backpassing, and with implementation of a major renourishment event. For safety purposes, beach and offshore recreation would be restricted to areas undergoing sand placement or within daily dredge or marine vessel operation corridors, so recreational users or other users would generally experience Project noise from a distance.

Construction activities on Broad Beach would utilize a bulldozer, excavator, flatbed delivery vehicles, dump truck, generator, compactor and miscellaneous power and hand tools (refer to Section 2.3.2, *Construction Staging Area and Equipment*, Table 2-2 Preliminary List of Construction Equipment for the Broad Beach Restoration Project for a complete listing of construction equipment expected to be used). Backpassing would employ scrapers and a bulldozer. Temporary and periodic increases in ambient noise levels would occur during the Project's construction phase, backpassing maintenance, and all major renourishment events.

Equipment operating offshore of Broad Beach would include a cutterhead suction dredge, a floating mono buoy with a pump, scows or hoper dredges delivering sand and marine escort vessels and/or tugs. Operations offshore of Dockweiler State Beach would involve a hopper dredge accompanied by marine escort vessels. At Ventura Harbor, a clam shell dredge would load sediment onto a scow, which would be accompanied by a tug for towing to Broad Beach.

The duration of construction and maintenance activities in the Project area would be short term. Initial construction would last 6 months, annual or biannual backpassing may last up 2 weeks per event, and renourishment events would be expected to last for less than 6 months. In addition, most activities associated with the development of this Project would be carried out in accordance with the city of Malibu's Noise Ordinance that limits construction activities to normal working hours of 7:00 AM to 7:00 PM Monday through Friday and 8:00 AM to 5:00 PM on Saturdays. No construction is permitted to occur on Sundays or city-designated holidays (city of Malibu 2011). The one exception to this would be pumping dredged sand onto the beach on a 24-hour-per-day basis.

**Impact N-1: Construction Impact to Recreational Users of Broad Beach**

**Short-term noise levels would increase during Project construction potentially affecting a public beach (Unsubstantial with Implementation of Avoidance and Minimization Measures, Class UI).**

Impact Discussion

The dominant noise generated onshore during dredging and placement of sand would result from diesel engines used to drive various pieces of equipment (e.g., bulldozers, cranes, pumps). Equipment that is anticipated onshore includes one crane, two bulldozers, one fuel truck, 10 delivery trucks and a booster pump near Trancas Creek mouth, if needed. Table 3.9-2 provides a summary of noise ranges for typical construction equipment.

Noise related to Project activities would only occur for a fixed period of time (6 months) during construction and maintenance cycles. Onshore Project operations would follow the city of Malibu's Noise Control Ordinance and confine activities to prescribed hours (7 AM to 7 PM) with the exception of pumping dredged sand onshore (24 hours/day). The noise levels generated by booster pumps, which would be approximately 56 dBA at a distance of 250 feet (SANDAG 2011), would primarily occur offshore. However, an additional booster pump may be located near the eastern end of Broad Beach, if necessary. Regardless, the noise generated from this pump would be less than that created by crashing waves or traffic on the Pacific Coast Highway. Therefore, pumping activities would not be expected to increase ambient noise to unacceptable levels.

**Table 3.9-2. Noise Ranges of Typical Construction Equipment**

| Equipment | Maximum Noise Level (dBA) 50 feet from Source |
|---|---|
| All other equipment (5 HP or less) | 85 |
| Backhoe | 80 |
| Compactor (ground) | 80 |
| Compressor (air) | 80 |
| Crane | 83 |
| Dozer | 85 |
| Dump Truck | 84 |
| Excavator | 85 |
| Flat Bed Truck | 84 |
| Front End Loader | 80 |
| Generator (25 KVA or less) | 70 |
| Generator (more than 25 KVA) | 82 |
| Grader | 85 |
| Pumps | 77 |
| Soil Mix Drill Rig | 80 |
| Tractor | 84 |
| Truck | 88 |

*Source*: Federal Transit Authority (FTA) 2006.
HP – horsepower
KVA - kilovolt ampere

*During beach nourishment, heavy equipment such as bulldozers, excavators or scrappers would operate on sections of Broad Beach for 6 months. Such heavy equipment can generate noise levels of up to 85 dB, 50 feet from the equipment.*

Noise levels from construction activities are typically considered as point sources and would drop off at a rate of 6 dBA per doubling of distance from the source over hard site surfaces, such as parking lots and water. The drop-off rate would be approximately 7.5 dBA per doubling of distance for soft site surfaces, such as grass fields and open terrain with vegetation (FTA 2006). For purposes of this analysis, all surfaces are considered acoustically hard. The magnitude of construction noise impacts depends on the type of construction activity, noise level generated by various pieces of construction equipment, duration of the activity, and distance between the activity and receptor. Maximum noise levels from construction equipment range from approximately 70 to 90 dBA at 50 feet from the source (FTA 2006). However, as shown in Table 3.9-2, maximum noise levels from

construction equipment anticipated to be used for the proposed Project range from approximately 70 to 85 dBA at 50 feet from the source.

The noise levels vary for each type of equipment, as equipment may come in different sizes and with engines of varying horsepower. Construction equipment noise levels also vary as a function of the activity level or duty cycle. In a typical construction project (without pavement cutting or breaking), the loudest short-term noise levels are those of earthmoving equipment under full load, which would be approximately 85 dBA at a distance of 50 feet from the source. However, with equipment moving from one point to another, work breaks, and idle time, the long-term noise level averages are lower than louder short-term noise events. The Federal Highway Administration Road Construction Noise Model includes usage factors for converting maximum noise levels to hourly noise levels. For purposes of analysis of the Project, a maximum 1-hour average noise level of 80 dBA $L_{eq}$ at 50 feet from the center of construction activities is assumed to occur (SANDAG 2011).

Construction equipment is also equipped with mandatory backup alarms, and sand distribution requires construction equipment to back up frequently. Therefore, the diesel engine noise would be accompanied at times by the backup alarm noise.

The analysis preformed for the beach nourishment project in San Diego (SANDAG 2011) was used to obtain approximate noise levels during construction because of the similarity between the two projects. The dominant existing noise at Broad Beach is wave noise, and ambient wave noise levels can be expected to range from 63 to 71 dBA. A peak construction noise event would include a diesel engine under load while sounding a backup alarm in proximity to a receptor. In these cases, construction equipment noise levels would be anticipated to occasionally exceed 85 dBA for a few minutes in a given hour. At other times, construction noise would be below 85 dBA, but still well above ambient noise levels.

As the receptor moves away from the construction activity, noise levels for the receptor would decrease with distance. At 200 feet, a decrease of 12 dBA would be anticipated. Thus, at distances greater than 200 feet, maximum construction noise levels would attenuate to 73 dBA Lmax or less, and average noise levels 68 dBA $L_{eq}$ or less (SANDAG 2011). Given background noise levels, equipment, with the possible exception of backup alarms, is not anticipated to be highly noticeable to beachgoers who are more than 300 feet from construction activity.

In offshore waters, engines and pumps on the dredges would be used for propulsion, to power dredge equipment, and to provide electric power. The dredge would be located 0.25 mile offshore of Broad Beach. Noise from dredges is estimated to be 90 dB at 50 feet (SANDAG 2011), and a conservative estimate for noise attenuation over water would be 5 dB for each doubling of distance. Expected noise levels reaching shore

would be between 65 to 70 dB for the operations offshore Broad Beach. Therefore, although offshore operations may be audible to onshore receptors, they would not constitute a substantial noise source and would instead be more of a temporary nuisance noise. Recreational users of the offshore areas would be more impacted and may choose to avoid use of the offshore areas during the times that dredges are present.

Onshore Project operations would follow the city of Malibu's Noise Control Ordinance and confine activities to prescribed hours with the exception of pumping dredged sand onshore, which is not anticipated to be audible above background noise. Offshore Project operations are expected to be far enough so that sound will not carry to receptors onshore. Noise impacts in the Project area would be unsubstantial with implementation of avoidance and minimization measures (AMMs).

Avoidance and Minimization Measures

**AMM N-1a: Use of Mufflers.** To the maximum extent feasible, equipment and trucks used for Project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).

**AMM N-1b: Limit Hours of Construction.** Pursuant to the Noise Control Ordinance of the city of Malibu, Section 8.24.050G, "*construction activities shall be prohibited during the hours between 7:00 PM and 7:00 AM during the weekdays and any time on Sundays or holidays*." All construction related to the Project would take place between the hours defined by the Ordinance, with the exception of pumping dredged sand onto the dune and onto the beach, which would occur 24 hours per day and 7 days a week during the 30-day pumping phase.

Rationale for Avoidance and Minimization Measures

Construction activities associated with the Project will occur in the immediate vicinity of private residences as well as the heavily used Zuma Beach. The implementation of these AMMs would ensure that an acceptable noise level would be experienced by the public within the vicinity of Broad Beach and during the public's use of the public trust lands.

**Impact N-2: Construction Impacts to Offshore Recreational Users in the Vicinity of the Borrow Sites and Sand Transportation Routes**

**Short-term noise levels would increase during Project construction potentially affecting recreational users in public trust waters (Unsubstantial, Class U).**

Impact Discussion

Noise related to Project activities in offshore areas would only occur for a fixed period of time during construction and nourishment cycles. Activities that may affect offshore recreational users include dredging sand from offshore Broad Breach, offshore Dockweiler State Beach, offshore of Ventura Harbor, and transporting sand from the borrow sites to Broad Beach. During these times, noise from the dredging equipment or noise from ship engines may be locally disruptive.

*A hopper dredge would be employed to transport sand from the sediment sources. Between 100 and 200 hopper dredge trips would be required (depending on capacity) with the vessels remaining off of Broad Beach for approximately 2 hours per trip to deliver their load for the 6-month period scheduled for dredging activities(December 2012-May 2013).*

Impacts from dredging would be temporary and the U.S. Coast Guard would post a *Notice to Mariners* with the coordinates of dredging activity so that ocean users can avoid the activity and the associated noise (see Section 3.14, *Marine Vessel Safety*). A 500-foot safety buffer would be maintained around the active dredge equipment.

Diesel engines used on dredges, tugs and escort vessels would be substantially larger than those used in construction equipment, and the noise generated would be greater. However, the engines would be housed in structures, which would reduce noise levels, and the resulting noise levels are not anticipated to exceed 90 dBA at 50 feet (SANDAG 2011). Noise from the slurry pumps would be approximately 77 dBA at 50 feet (FTA 2006 and SANDAG 2011). Additionally, the noise levels experienced by recreational users just outside of the 500-foot buffer surrounding all active dredging operations would be between 70 dBA and 57 dBA for each sound source. These noise levels would be noticeable to users, particularly on calm, still days and over the ambient noise level of 50 dBA generated by a 20 to 25 mile per hour (mph) breeze, and noise from ocean water movement (Distributed Wind Energy Association 2010). Project noise would be most noticeable to passing kayakers, stand-up paddle boarders, and from sail boats, but less noticeable to passing power boats.

Vessels transporting sand from a borrow site to the Project area would generate noise levels similar to those of cargo vessels traveling along the nearby shipping corridors. This noise may be audible to nearby recreational boaters, ocean swimmers, kayakers, and surfers but would attenuate with distance. Sand transport via ship would only take place during the initial nourishment stage and during any renourishment maintenance

event. Assuming a total of 500,000 cubic yards (cy) of sand are dredged and transported by a vessel with a conservative capacity of 2,000 cy, approximately 250 trips would be necessary during the first nourishment event. These trips would take place over a 6-month period during the initial nourishment event. Given the short- term nature of this activity, the 500-foot setback from primarily vessel activity off of Broad Beach and the transient nature of noise from passing vessels, impacts to offshore recreational users from dredging and sand transport would be unsubstantial.

**Impact N-3: Construction Impacts to onshore Recreational Users at Ventura Harbor and Dockweiler State Beach**

**Short-term noise levels would increase during dredging activities potentially affecting beach users on Dockweiler State Beach and/or Ventura Harbor (Unsubstantial, Class U).**

Impact Discussion

Noise impacts to onshore receptors in the vicinity of offshore dredging operations at the borrow sites would be similar to impacts at the Broad Beach Restoration Area. Diesel engines on the dredges and marine vessels would generate high noise levels of up to 90dBa at 50 feet. The dredge would be located 0.25 mile offshore of Dockweiler State Beach and outside of the mouth of Ventura Harbor. Given the rate of attenuation and the baseline noise levels experienced by receptors on the beach, noise generated by offshore equipment would be audible to onshore receptors at Dockweiler State Beach, particularly during periods of onshore winds. However, noise levels would be attenuated by distance and would be far lower that ambient and peak noises generated by operations at LAX. Noise impacts to individuals in Ventura Harbor would be more noticeable given the proximity of the dredging to receptors. However, noise would again be attenuated by distance, and construction activities would be short-term. In addition, Ventura Harbor is a functioning harbor and periodically undergoes dredging for maintenance, so the disruption and noise of dredging for the Project would be within the range of expected activities that the public anticipates to be performed in the harbor area. Thus, impacts to onshore receptors in the vicinity of the borrow sites would be unsubstantial.

**Table 3.9-3. Summary of Noise Impacts and Avoidance and Minimization Measures**

| Impact | Avoidance and Minimization Measures |
|---|---|
| **N-1:** Construction Impacts to Recreational Users at Broad Beach | **AMM N-1a:** Use of Mufflers<br>**AMM N-1b:** Limit Hours of Construction |
| **N-2:** Construction Impact to Offshore Recreational Users | No AMMs recommended |
| **N-3:** Construction Impacts to onshore Recreational Users at Ventura Harbor and Dockweiler State Beach | No AMMs recommended |